**Amendments to the Claims:**

1. (currently amended) A method for redundant array of independent disks (RAID) consistency initialization comprises: creating a_RAID, including setting a RAID configuration of the RAID and creating an initialization progress table for storing progress

5 states of the initialization of the RAID; wherein the initialization progress table includes a plurality of fields, each of which is used to record whether a regional initialization is performed on an initialization region, wherein after the initialization progress table is created and before ~~the completion of~~ the consistency initialization is completed, the RAID is allowed to be accessed while ~~access and~~ the consistency initialization is ~~allowed to start~~

10 in progress.


2. (original) The method of claim 1 wherein the RAID configuration is stored in a non-volatile memory device.


15 3. (currently amended) The method of claim 1 wherein the consistency initialization comprises: ~~an induced consistency initialization.~~
     detecting, when the RAID receives an I/O, whether the initialization region that is associated with the I/O has completed the regional initialization; and
     initializing the initialization region first if the initialization region has not completed

20 the regional initialization.


4. (currently amended) The method of claim 1, further comprising steps of:
     detecting, when the RAID receives an I/O, whether the initialization region(s) that is(are) associated with the I/O is(are) completed with the regional initialization;

25 waiting for completion of the regional initialization if the initialization region(s) is(are) not completed with the regional initialization and the regional initialization is being performed on the initialization region(s) that is(are) associated with the I/O; updating an initialization state change of the initialization region(s), into the initialization progress table; and

30 writing the updated initialization progress table into a non-volatile memory device

before an I/O result is returned.

3 wherein the induced consistency initialization comprises: (a) detecting whether the consistency initialization is completely performed on the whole RAID when the RAID receives an I/O; (b) if step (a) is negative, detecting whether a regional initialization is completely performed on an initialization region associated with the I/O; (c) if step (b) is negative, detecting whether the regional initialization is being performed on said initialization region associated with the I/O; (d) if step (c) is affirmative, waiting for the completion of the regional initialization, and if step (c) is negative, performing the regional initialization on said initialization region and updating initialization a state change of the initialization region to said initialization progress table; and (e) writing the updated initialization progress table into the non-volatile memory device if a predetermined condition is met.

5. (currently amended) The method of claim 4, wherein the I/O accesses the RAID after the step (e) of writing the updated initialization progress table into the non-volatile memory device.

6. (currently amended) The method of claim 4 wherein the I/O accesses the RAID before the step (e) of writing the updated initialization progress table into the non-volatile memory device.

7. (currently amended) The method of claim 1, further comprising step of performing a consecutive consistency initialization on the initialization regions that have not yet completed the regional initialization. wherein the consistency initialization further comprising comprises a consecutive consistency initialization.

8. (currently amended) The method of claim 7, wherein the consecutive consistency initialization comprises steps of:

selecting one of the initialization regions which have not yet completed the regional initialization;

performing the regional initialization on the selected initialization region if the regional initialization is not already being performed on the selected initialization region;

updating an initialization state change of the selected initialization region, into the

5         initialization progress table;

writing the updated initialization progress table into a non-volatile memory device, when the regional initialization is performed at a suitable time, wherein the suitable time is a timing when a predetermined number of initialization regions is completed with the regional initialization, when a predetermined percentage of the initialization

10         regions is completed with the regional initialization, or when a predetermined time has elapsed after the initialization progress table is stored in a member disk; and repeating aforesaid steps until all initialization regions have completed the regional initialization.

~~wherein the consecutive consistency initialization comprises following steps: (a) selecting~~

15        ~~an initialization region which has not been completed with initialization yet; (b) if a~~ ~~regional initialization is not being performed on the selected initialization region,~~ ~~performing the regional initialization on the initialization region; (c) if step (b) is~~ ~~performed, updating the initialization state changes of the initialization region to an~~ ~~initialization progress table; (d) if a second predetermined condition is met, writing the~~

20        ~~updated initialization progress table into the memory device; and (e) repeating step (a)~~ ~~through step (d) until all initialization regions are completed with initialization.~~

9. (currently amended) The method of claim 8 further comprising, after all initialization regions have completed regional initialization, step of ~~(f)~~ writing a state which shows

25        ~~showing~~ that all initialization regions are completed with initialization, into the non-volatile memory device.

10. (currently amended) The method of claim 7, wherein the consecutive consistency initialization comprises steps of:

30        performing a regional initialization priority adjustment mechanism to determine

whether to select one of the initialization regions which have not yet been completed with the regional initialization;

selecting one of the initialization regions which have not yet been completed with the regional initialization;

5          performing the regional initialization on the selected initialization region if the regional initialization is not being performed on the selected initialization region; updating an initialization state change of the selected initialization region in the initialization progress table;

writing the updated initialization progress table into a non-volatile memory device,

10         when the regional initialization is performed at a suitable time, wherein the suitable time is a timing when a predetermined number of initialization regions is completed with the regional initialization, when a predetermined percentage of the initialization regions is completed with the regional initialization, or when a predetermined time has elapsed after the initialization progress table is stored in a member disk; and

15         repeating aforesaid steps until all initialization regions have completed the regional initialization.

~~further comprising: (a0) performing a regional initialization priority adjustment mechanism to determine whether selecting an initialization region which has not yet been completed with initialization or not before the step (a) selecting the initialization region~~

20      ~~which has not been completed with initialization yet and said step (e) comprising repeating steps (a0) through (d) until all initialization regions have been completed with initialization.~~

11. (currently amended) The method of claim 1, wherein the consistency initialization

25      further comprises a consecutive consistency initialization, and after the initialization progress table is created, the consecutive consistency initialization is allowed to start anytime.

12. (currently amended) The method of <u>claim 7</u> ~~claim 1~~, wherein the RAID is allowed I/O

30      accessing before the consecutive consistency initialization.

13. (original) The method of claim 1, wherein the consistency initialization comprises dividing a data space of member disks into a plurality of initialization regions and performing the regional initialization on the initialization regions.

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14. (original) The method of claim 3, wherein the consistency initialization comprises dividing a data space of member disks into a plurality of initialization regions and performing the regional initialization on the initialization regions.

10    15. (currently amended) The method of claim 3, wherein the consistency initialization comprises dividing a data space of member disks into a plurality of initialization regions and performing the regional initialization on the initialization regions, and after the I/O that induces the regional initialization completes access to a data space of the RAID, the initialization progress table updated due to an I/O accessing a data space of the RAID and

15    inducing the regional initialization progress table is written into the a non-volatile memory device after said accessing has been completed, and then an I/O result is returned.

16. (currently amended) The method of claim 3, wherein the consistency initialization comprises dividing a data space of member disks into a plurality of initialization regions

20    and performing the regional initialization on the initialization regions, and after the initialization progress table updated due to an I/O inducing the regional initialization is first written into the a non-volatile memory device first, and then said an I/O accesses the a data space of the RAID.

25    17. (original) The method of claim 2, wherein the non-volatile memory device is a member disk.

18. (currently amended) The method of claim 2, wherein there are a plurality of versions of the initialization progress table stored in the non-volatile memory device.

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19. (currently amended) The method of claim 1, wherein if a member disk failed and a new member disk is used to perform a rebuilding of the RAID before the completion of the consistency initialization, the rebuilding only has to perform on the <u>initialization</u> regions which have been completed with the consistency initialization and the rebuilding on the regions which have not been completed with the consistency initialization can be performed by the consistency initialization.

20. (currently amended) The method of claim 1, wherein when an I/O operation accessing the RAID is a read operation, and a <u>the initialization</u> region on the RAID to be accessed by the I/O has not been initialized yet, no consistency initialization is performed on the <u>initialization</u> region, and a value of zero or a predetermined value will be returned directly.

21. (currently amended) The method of claim 1, wherein when a <u>the</u> RAID performs an I/O operation and causes an induced consistency initialization, if the induced consistency initialization has been completed but the I/O operation has not been completed while the updated initialization progress table has been written into member disks of the RAID, the updated initialization will not be written into the member disks again due to completion of the I/O operation.

22. (original) The method of claim 2, wherein the memory device is a battery backed-up SRAM, a flash RAM or a disk drive except a member disk.

23. (new) The method of claim 1, wherein the consistency initialization comprises steps of:
    detecting, when the RAID receives an I/O, whether one of the initialization regions that are associated with the I/O has not been started with the regional initialization; and
    performing the regional initialization on said initialization region first if said initialization region has not yes started the regional initialization.

24. (new) The method of claim 23, further comprising a step of performing a consecutive consistency initialization on the initialization regions that have not yet completed the regional initialization.

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